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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,061	09/19/2001	Soon-kyo Hong	1349.1028	8477

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EXAMINER

KIM, PAUL D

ART UNIT PAPER NUMBER

3729

DATE MAILED: 10/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/955,061

Applicant(s)

HONG ET AL.

Examiner

Paul D Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) 5-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 14 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This office action is a response to the after final amendment filed on 10/15/2004.

#### ***Response to Amendment***

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action mailed on 6/17/2004 is persuasive and, therefore, the finality of that action mailed on 6/17/2004 is withdrawn.

#### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Duston et al. (US PAT. 3,538,298).

Duston et al. teach an apparatus for balancing high speed rotational units comprising: a disc assembly having a driving source (9) and at least one disc (5) rotatably disposed at the driving source; a measurement unit measuring an eccentric portion of the at least one disc (col. 1, lines 55-57); and a laser cutter moving to a cut portion of the disc corresponding to the measured eccentric portion, while the disc is not rotating (col. 1, lines 49-62). Duston et al. teach that the unit is rotated to determine the effectiveness of removal and the location of the eccentric portion. Inherently, the

measurement unit (not shown) is measured the eccentric portion of the at least one disc to determine the effectiveness of removal and the location of the eccentric portion.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duston et al. as applied to claim 14 above, and further in view of Scuricini (US PAT. 4,096,988).

Duston et al. teach all of the limitations as set forth above including, inherently, the measurement unit (not shown) measured the eccentric portion of the at least one disc to determine the effectiveness of removal and the location of the eccentric portion. Duston et al. also teach a stroboscopic light device (equivalent with the phase angle measurement unit). However, Duston et al. do not teach an operation/control unit calculating an eccentric mass and an eccentric position of the disc assembly, by using the biased vibration measured in the displacement measurement unit and the phase angle measured in the phase angle measurement unit. Scuricini teaches an apparatus for the dynamic balancing of rotating bodies comprising a disc assembly (14) having a driving source (1) as shown in Figs. 2 and 3; a displacement measurement unit (4, 15 as shown in Fig. 3) for measuring vibration in the rotation of the disc assembly; a phase

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angle measurement unit (18, signal generator, as shown in Fig. 3) measuring an angular position of the rotating body; and an operation/control unit (8) collecting data from the displacement measurement unit and phase angle measurement unit (see also col. 5, line 39 to col. 6, line 35). Scuricini also teaches that the vibration is caused by the mass eccentricity and removed the certain amount of the material from the mass eccentricity at the positions specifically disclosed in lines 39-54 of col. 5. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the apparatus for balancing a disc of Duston et al. by an operation/control unit as taught by Scuricini in order to effectively archive the proper balance of the rotating objects.

As per claim 4 Duston et al. also teach a stroboscopic light device (equivalent with the phase angle measurement unit) to illuminate one or more sequentially numbered bands circumscribing one or both ends of the rotating objects and indicating a location (reference point) of the eccentric mass and removing the eccentric mass by laser to provide proper balance for rotary motion as shown in Fig. 2 (see also. Col. 1, lines 25-54).

6. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duston et al., modified by Scuricini, and further in view of Misso et al. (US PAT. 6,424,488).

Duston et al., modified by Scuricini, teach all of the limitations as set forth above except a dust inhaler. Misso et al. teach an apparatus of a disc stack balancing including a vacuum port, which is desirable to remove particles during the trimming

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operation (col. 3, lines 46-48). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the apparatus for balancing a disc of Duston et al., modified by Scuricini, by a vacuum port as taught by Misso et al. in order to prevent a potential damage of the disk stack and improving the disc stack balancing.

As per claim 3 the dust collecting apparatus and laser cutter of Duston et al., modified by Scuricini and Misso et al., is, inherently, operated by an unmanned operation to optimize and reducing errors for removing the portion of the corresponding disc.

***Allowable Subject Matter***

7. Claims 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose the claimed invention such as a plurality of discs is rotatably disposed at the driving source and the laser cutter moving to a cut portion of the disc corresponding to the measured eccentric portion, while the disc is not rotating (as per claim 15) and the laser cutter tracks and laser-cuts side portions of the discs corresponding to the eccentric position according to the eccentric mass information from the operation/control unit, wherein the eccentric mass of the disc assembly is balanced to reduce vibration in the rotation (as per claim 16).

***Response to Arguments***

9. Applicant's arguments with respect to claims 1-4 and 14-16 have been considered but are moot in view of the new ground of rejection. Rejections are based on the newly cited reference.

10. This application contains claims 5-13 drawn to an invention nonelected with traverse in the reply filed on Paper No. 4. A complete reply to the final rejection must include cancelation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Paul D Kim  
Examiner  
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